



## DEPARTMENT OF THE INTERIOR

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ADDRESS BY D. H. JANZEN, DIRECTOR, BUREAU OF SPORT FISHERIES AND WILDLIFE, FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, TO THE 23rd NORTH AMERICAN WILDLIFE CONFERENCE AT ST. LOUIS, MISSOURI, MARCH 3, 1958

#### TODAY'S OPPORTUNITIES FOR CONSERVATION IN WATER DEVELOPMENTS

About a month ago this Nation projected into the atmosphere its first satellite, "Explorer", a culmination of American scientific research in a most complex field. We are all justifiably proud of this accomplishment, one of the first tangible steps in the new field of space conquest, and we hope for the success of this new venture, the potentialities of which stagger the imagination. But while we are probing the limitless depths of space, let us not forget that our mother earth and the resources thereon are still the foundation on which the success of space conquest must rest. This foundation must remain sound, and our water resources, as used or misused, will play an indispensable part in keeping this foundation sound.

Today's opportunities for conservation in water development are just as exciting to scientists and engineers in the field of resource development as are space conquest opportunities to those working in that field. Converting salt water to fresh water, making rain fall where drouth would be expected, storing surplus water underground for future use, keeping water clean and usable for many purposes through control of pollution--these are just a few of the challenges that will test the best brains of our Nation. And these challenges must be met. We are now told that the demand for water will double in the next twenty years, and already we are confronted with water shortage--serious water shortage in many sections of the country. There is shaping up a real race between water demand and water supply, a race we cannot lose. This is one race that must be so engineered that the supply of the right kind of water will always stay one step ahead of demand. So let's not let the beams from an artificial moon blind our eyes to today's opportunities to conserve, use wisely, and develop our water resources for the long pull ahead.

And now I would like to talk a little about coordination in the field of water development. Coordination is a badly overworked term in the Government's vocabulary, but I think we can all agree that we don't see enough of its application. In water development the coordinated approach is absolutely necessary--there can be no other approach if we are to satisfy the requirements of an ever increasing human population. Whether we want it for drinking, swimming, irrigation, navigation, hydro-electric power or just to float a duck, the same water must serve many purposes.

Water development projects of today and for the future must have as their objectives the serving of all water needs. Single purpose projects which ignore other needs are extravagant users of water, and our potential water supply does not

have a margin for extravagance. We must get maximum public use out of all water developments if we are to meet all our needs. A good example of a resource whose needs have steadfastly been neglected in the mad race for water utilization and development is Fish and Wildlife—a resource in which this convention has a prime interest. Unless water use for fish and wildlife becomes a purpose of tomorrow water development projects, much of this particular resource is going to end up stranded—high and dry. To date most gains to fish and wildlife from major water development projects have been by accident—or because of the persistence of those interested in the conservation of fish and wildlife—seldom by design resulting from original planning.

But maybe one should not be too critical of past water development programs which were single purpose in their objective. Ours is a new Nation whose resources development planning has been primarily by forces who had single objectives in mind. Necessary authorizing legislation and subsequent planning has reflected this single-purpose thinking. This was not serious in the field of water development when the ratio between water resources and human demands was favorable, but that day is gone. Irrigation, hydroelectric power, navigation, agricultural drainage, industrial use, sewage disposal and other demands on water are daily becoming more competitive in their efforts to divide the remaining water resources between them. Fish and wildlife, which originally had exclusive use of all this water, must now make a determined bid to retain a share for its own survival.

For example, migratory fish whose very existence depends upon unobstructed passage from their spawning beds to the ocean and return now face dams which even with man's help they cannot surmount.

A friend of mine recently asked me why fish should not have as much consideration as barges in a navigation system. I think he had a point. Water is just as important to a fish as it is to a barge, but the laws of our land do a much better job protecting the right of a barge to unimpeded movement than they do a run of fish whose very existence depends upon the continuance of an unobstructed river system. There are various proven ways of transporting freight from one point to another or of producing electric power, but so far no one has successfully changed the life history of a salmon.

Now what can be done to give fish and wildlife a little better break in this mad scramble for water? We now have on the books a most important piece of Federal legislation—the Coordination Act as amended in 1946. It has been of great help—without it we wouldn't have anything—in aiding the Conservation Departments of the 48 States and the Fish and Wildlife Service in reviewing water development projects and making recommendations which would help minimize or replace losses to fish and wildlife, but experience over the years has clearly shown that mitigation of losses is not enough. Enhancement or definite planning for fish and wildlife improvement must become a part of water resource development programs, and the present Coordination Act does not provide for that. Amendments have been proposed which would provide authority to plan for and construct project features designed

to enhance and improve fish and wildlife. They would facilitate making fish and wildlife habitat improvement a purpose of Federal water development projects. They would provide general authority, now lacking, for the acquisition of land specifically for fish and wildlife purposes by Federal construction agencies at Federal water projects. The availability of land for fish and wildlife management purposes is, as we all know, the key to fish and wildlife conservation at many projects. They would make the Act apply to projects already authorized, providing they are not substantially completed. They would permit acceptance of land and fund donations for carrying out the purposes of the Act, provide for withdrawal of public lands for access to fishing waters and would simplify procedures for the States to assume management of lands on Federal projects of particular value to the migratory bird program. Enactment of these legislative amendments should go a long way in providing one of the opportunities Fish and Wildlife needs in the field of water development.

Preservation of wetlands valuable to fish and aquatic types of wildlife is another opportunity we should not miff. The loss of wetlands to drainage during the past 15 years has been very substantial, and a solution to this serious problem is now a major project of many States and the Fish and Wildlife Service. This loss is occurring nationwide.

Better coordination of land and water-use programs of the various Federal agencies would go a long way toward solving this problem. We do, however, definitely recognize that even complete coordination will not save enough wetlands in the long-range picture, and a positive program for wetlands preservation, expensive as it may be, is another opportunity that must not slip by. Some kind of incentive must be provided landowners which will result in their not draining small lakes and marshes essential to wildlife. In many cases public ownership of wetlands may be the only solution. We hope, however, to find other less costly methods that can be used in combination with land acquisition. Public ownership of the magnitude necessary to do a complete job has many disadvantages. But of one thing we can be sure--it is going to be an expensive program regardless of what methods are used. And even with an all-out program of wetland preservation, aquatic wildlife habitat will still lose ground.

This brings us to a field of opportunities that as yet has hardly been scratched, the opportunity to have research lead the way toward production of more fish and wildlife on less acres of water--a program of urgent importance and one which to date has not been given the attention it merits. It is one on which the Fish and Wildlife Service will concentrate more of its financial resources in the future.

And now to get away from fish and wildlife and talk a little about other opportunities in water development. The possibilities of changing sea water into fresh water offer exciting opportunities for the future. This could lead to limitless supplies of water for many areas, with all that would portend. But again, for most of the Nation we will still have to depend upon nature's converter--the sun, the clouds, and the rain that falls from them. Proper use of each raindrop from the time it strikes the hilltops until it finds its way to the ocean still presents the greatest opportunity of today.

Let's look at an opportunity which we have badly neglected--pollution control--one which affects every one of us. It doesn't make any difference how we may want to use water--it costs more to use it if it isn't the right kind of water. Whether it be improperly treated sewage, industrial waste, silt from our hillsides, or chemicals from spraying operations, any foreign material which finds its way into our system of lakes and rivers depreciates the value of that water for some other use--often making it unavailable for other use until reprocessed, a procedure that in most cases should be unnecessary. A situation that has no place in this day when our very standard of living depends on an adequate supply of the right kind of water.

Transporting water for domestic use hundreds of miles across mountains, as is now being done on the West Coast, would seem to be a very expensive proposition, which it is, but it is no more expensive than some of the elaborate filtration plants cities must now construct to make polluted water fit for human use. Why not keep the contamination out of the water in the first place? That is the question which has been asked by countless water users. Certainly one of the opportunities in the field of conservation water development lies in developing ways and means of keeping industrial waste and city sewage out of our natural water courses. This opportunity of cleaning up and keeping clean our lakes and rivers is one we cannot keep on muffling.

Along this same line and of equal importance in pollution control is the problem of doing a better job in keeping the soil from our hillsides out of our water courses. A fine program for soil erosion control was started during the early 30s and the rapid acceleration of soil wastage through erosion was slowed down. But a bird's eye view of our whitening hilltops and eroding slopes followed by muddy streams and short lived farm ponds and reservoirs makes it only too clear that we still have a long way to go in this field.

New sources of water contamination unheard of only a few years ago present wonderful opportunities for preventing some of the mistakes of the past. Atomic wastes present such an intensely dangerous potential to man that great care has been taken by the Government and industry to keep this type of pollution under control. But another new type of pollution, the dangerous potentialities of which we are just beginning to see, lies in the field of chemistry with around a half billion pounds of toxicants of various types being annually broadcast over our nation for insect and weed control. Many of these are applied over broad areas and await only the next rain to wash them into the nearest water course. Enough evidence has already come to light to make it clear that this new industry presents a serious threat to fish and wildlife, and even man may not come out unscathed unless we immediately concentrate more research on just what these chemicals may do and are doing to all living creatures. The complexity of completely understanding the effects, both direct and indirect, of the large number of new chemicals appearing on the market every year make this indeed a very difficult problem to solve. But the importance of these chemicals to agriculture and the variety of new uses being continually found for these chemicals makes it a foregone conclusion that more, rather than less, chemicals will be used in the future, and we have therefore no choice but to concentrate more research on this problem immediately.

I think that water pollution regardless of source generally will have to be brought under control. Man just is not going to be able to live with it. The combination of sewage, chemical, and silt contamination does such a thorough job of killing our streams and many lakes, both natural and man made, that the problem is brought into sharp focus. This coupled with our rapidly growing human population leaves only one recourse, clean up or clear out. A privy in the backyard presented no problem when the next door neighbor was a quarter mile away. But when your neighbor builds his home next door and sinks his well under your privy the situation becomes quite different--that is the situation facing us on a broad scale today.

There are a number of opportunities for water conservation in new untested fields. One of these involves the storage of water underground. Studies along this line are underway. The advantages are many. The surface soil over the underground reservoirs can be utilized and the loss through evaporation is negligible. Out of this study we may also learn that many of our wetlands so often termed waste lands by the uninformed may be very important in the recharging of the underground waters. More research into the relationship between surface and subsurface waters will be necessary to fully realize water development opportunities in this field. But the potentialities warrant more attention than has been given this type of water conservation in the past.

Weather control and its possibilities in producing more or less rainfall presents limitless and almost frightening opportunities. Let us just hope that while research is finding the answers on how to turn on and turn off the rain from the heavens, operations will move only as fast as prudence dictates, but this could be the biggest opportunity for water development of them all.

Opportunities for development in the field of water conservation are endless. But we must have the vision to see them, the determination to make use of them, and the intelligence to fully and properly exploit them.

In closing I would again like to repeat that space may be conquered by earthlings, but that earth will have to remain strong during the process. Without enough of the right kind of water this cannot be.

We need only to look back into history to see what happened to nations who outgrew their water supply.

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